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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,286	08/02/2001	Wolfgang Buerger	GT/83A	5322

7590 01/29/2004
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EXAMINER

RUTHKOSKY, MARK

ART UNIT PAPER NUMBER

1745

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/921,286

Applicant(s)

BUERGER ET AL.

Examiner

Mark Ruthkosky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The rejection of claims 1-3, and 5-13 under 35 U.S.C. 102(b) as being anticipated by Burger et al. (WP 99/16138) has been overcome by the applicant's amendment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burger et al. (WO 99/16138) in view of Oka et al. (US 5,830,603.)

The instant claims are to an electrochemical energy storage device comprising at least two electrodes and a KOH electrolyte, and a carrier material for the electrolyte disposed between the electrodes. The carrier material comprises a porous material having inner pores in which a perfluorinated polyether phosphate is present.

Burger et al. (WO 99/16138) teaches an electrochemical energy storage device comprising at least two electrodes and an electrolyte, and a carrier material for the electrolyte disposed between the electrodes (see claims 1-21.) The carrier material comprises a porous material having inner pores in which a perfluorinated-polyether phosphate is present (see Table 1, MF 201 for a perfluorinated-polyether phosphate.) The porous material is shown to be PTFE.

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Nanoscale ceramics, including phosphates, are noted in the last paragraph of page 12. The device is disclosed to be a capacitor and may have a base as the electrolyte (page 2, lines 3-10 and page 4, line 29-page 5 end.)

Burger et al. (WO 99/16138) does not teach the base electrolyte to be KOH. Oka et al. (US 5,830,603) teaches an electrochemical energy storage device comprising at least two electrodes and an electrolyte, and a carrier material for the electrolyte disposed between the electrodes (see claims 1-27.) The carrier material comprises a porous material, such as PTFE, having inner pores that are imbibed with a hydrophilic resin (see col. 6, lines 42-64, col. 7, lines 25-45; col. 10, lines 15-35.) Nafion, which is a perfluorinated-polyether, is noted as a resin added to the pores of the carrier matrix (col. 7, line 41.) The reference further teaches that the electrolyte matrix is used in alkaline storage batteries (col. 12, lines 30-35; col. 10, lines 15-35), has excellent stability against alkali, and shows specific examples of the composite carrier used in an alkaline battery with KOH as an electrolyte (such as in example 1.) It would be obvious to one of ordinary skill in the art at the time the invention was made to use KOH as the base electrolyte of Burger et al. (WO 99/16138) as it is broadly known to be used as a basic electrolyte in electrochemical devices in order to transfer electrochemical charge. As Burger et al. (WO 99/16138) teaches the device to have a base electrolyte, one of ordinary skill would understand that the base, KOH, would be a useful electrolyte to transfer charge. Further, one of ordinary skill in the art would recognize from the teachings of Oka et al. (US 5,830,603) that the electrolyte would transfer charge in a composite matrix of PTFE with a hydrophilic material such as a perfluorinated-polyether phosphate.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burger et al. (WO 99/16138) in view of Oka et al. (US 5,830,603) as previously applied, and further in view of Hiroshi (EP 718,903.)

The teachings of Burger et al. (WP 99/16138) and Oka et al. (US 5,830,603) have been presented. Burger et al. (WP 99/16138) and Oka et al. (US 5,830,603) do not teach the electrochemical devices to be an alkaline fuel cell. The Burger reference does note that the electrolyte/separator could be used in a fuel cell and that the material is commonly used with a base electrolyte. Hiroshi (EP 718,903), however, teaches a fuel cell incorporating a membrane in which a porous membrane material is coated with a resin that may include sulfonic acid functional groups (see the examples.) The membrane is used between two electrodes to transfer charges as in the instant application. It would be obvious to one of ordinary skill in the art at the time the invention was made to use the membrane of Burger et al. (WP 99/16138) in an electrical device such as an alkaline fuel cell as one of ordinary skill in the art would recognize that the material may be applied to transfer ionic charge between the electrodes of a fuel cell as taught in both Burger and Hiroshi (EP 718,903.) As the Burger et al. (WO 99/16138) reference teaches the membrane may be used in a variety of electrochemical energy storage devices, one of ordinary skill would expect ionic transfer using the membrane in a fuel cell.

Response to Arguments

Applicant's arguments filed 11/17/2003 have been fully considered but they are not persuasive. The applicant argues that the specific example in the reference incorporating a perfluorinated polyether phosphate uses an acid electrolyte in the cell. The applicant further

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notes that the product literature for the perfluorinated polyether phosphate material promotes its use as a barrier layer for oil/water repellency.

The arguments are not found persuasive. The role of the product literature with regard to oil/water is not equivalent to the use of the material in the reference. Oil is not a substance used in the electrolytes of record and the comment from the product literature does not discuss KOH electrolytes.

In addition, Burger et al. (WO 99/16138) clearly states that the materials of the invention may be used with electrolytes of both acids and bases. Further, the reference shows that the materials are added to the substrate to improve electrolytic flow, ion flow and mobility (page 6.) The rejection has been modified to show teachings of a PTFE membrane being made hydrophilic in an equivalent manner as disclosed in the instant application to improve the ionic conductivity of electrolytes including KOH. From these teachings, it would be obvious to use KOH as a base electrolyte in the invention of Burger as the material will improve the conductivity of the electrolyte through the porous PTFE composite membrane.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). The amendment includes claims that are dependent on amended claim 1 which changes the scope of the claims.

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

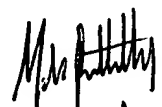
Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:00.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306.

Mark Ruthkosky

Primary Patent Examiner

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1/23/04